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ABSTRACT

To meet new market requirements and respond to increasing international competition, enterprises in Australia are introducing competitive strategies involving workplace reform. Many enterprises are adopting a strategy for change that is focused on human resource development rather than on technology. A four-phase model of development for an organization has been described in which the structural and cultural requirements of each phase are described. In Australia, the restructuring of industrial awards is an important part of the process of workplace reform. Workplace reform is having a big impact on the skills required of the work force. Consequently, substantial changes to vocational education and training are needed. Workplace reform will increase demand for vocational education and training and affect the type of vocational education and training required. Four case studies indicate the importance of vocational education and training in the competitive strategies of these enterprises: Printco, a supplier of newsprint; ALCOA of Australia Limited, an aluminum producer; South Australian Engineering and Water Supply Department; and Perry Engineering which engages in heavy engineering. The case studies demonstrate that Technical and Further Education needs to compete for the market of trade apprenticeship programs on the grounds of price, quality, and flexibility. (Contains 30 references.) (YLB)

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Workplace reform and TAFE: Four case studies

Geoff Hayton
Philip Loveder

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Chapter 1 The literature on workplace reform and vocational education

Introduction

To meet new market requirements and in response to increasing international competition, enterprises in Australia are introducing competitive strategies involving *workplace reform*. New organisations are needed—for most industry sectors it is no longer sufficient merely to cut costs to become more efficient. To become efficient, produce quality, become flexible and innovative, firms will need to implement substantial changes in the workplace.

Workplace reform has been defined by Hayton (1990) as the introduction of new forms of work organisation accompanied by some or all of the following:

- introduction of new technology
- job redesign
- restructuring of industrial awards or enterprise agreements
- a higher skilled workforce by means of enhanced career paths and vocational education and training

For most enterprises in Australia the changes required to become internationally competitive are not easily planned and implemented, and usually require a multiphase process over a period of several years. A recent study of Australian firms compared to some of the world's best practices showed that, on average, Australian firms need to improve productivity by 25% to catch up (Shann and Fitzgerald 1990). Success in international markets is not related to where we have come from or how much we have improved, but it is related to where we are now compared with the world's best. Many Australian firms have recognised this and have undertaken international best-practice bench marking to provide a target for improvement. This approach to bench marking involves the documentation of the world's best firms in terms of costs, quality and other factors for the particular market field the firm is in.

It is widely believed that for most industries to attain competitiveness in the 1990s, enterprises will require a transformation to a new organisation which produces quality goods or services and is efficient, flexible and innovative. The new organisation generally requires a highly skilled workforce, modern technology and an appropriate structure and culture. Many enterprises in Australia and other developed nations are adopting a strategy for change which is focussed on human resource development rather than technology. Technological change to processes will continue to be an important competitive strategy in the 1990s for most organisations, but not as integral as in the past. A major challenge now for most organisations is human resource development.

Work organisation

What changes to work organisation are required to be competitive in the 1990s? For manufacturing, Bolwijn and Kumpe (1990) have described a four-phase model in which the structural and cultural requirements of each phase are outlined (see figure 2). Research support for this model comes from case studies of large manufacturers in Europe and Japan.

Manufacturing organisations are evolving from the 'efficient firm' characterised by specialisation and hierarchical organisation to the 'quality firm' characterised by communication and co-operation. Further evolution to the 'flexible firm' is achieved in part by implementing a structure based on integration and decentralisation. Evolution to the final phase of the 'innovative firm' is achieved by retaining some features of all the previous phases and encouraging a culture of participation and democratisation.

Descriptions of the four types of firm are given in the box: *the four phases*. In reality, companies or parts of companies will never show the 'pure' characteristics of one phase. In harmony with this model are the descriptions of the bureaucratic and organic systems provided by Burns and Stalker (1961). The efficient firm and quality firm are *bureaucratic* organisations whereas the flexible firm and innovative firm and *organic* organisations.

Organisational phase	Performance criteria	Structure/culture requirement
Efficient firm	efficiency	specialisation and hierarchical organisation
Quality firm	efficiency + quality	communication and co-operation
Flexible firm	efficiency + quality + flexibility	integration and decentralisation
Innovative firm	efficiency + quality + flexibility + innovative ability	participation and democratisation

Figure 2: The four phases of development for an organisation (adapted from Bolwijn and Kumpe 1990)

Bolwijn and Kumpe assert that large manufacturing organisations are unlikely to skip a phase successfully. This principle is illustrated in figure 3. For example, to become a successful flexible firm an organisation needs to make two transitions, from efficient to quality (cultural change) and quality to flexible (structural change). In 1990 they perceived that most large manufacturing firms in Europe were in the transition from the quality firm to the flexible firm, though a number are still engaged in mastering quality.

Bolwijn and Kumpe's view of the changes occurring in work organisation and their skill implications is in line with the views of many other writers

of the 1980s. Such writers are often referred to as 'post-Fordists'. The post-Fordists view the current changes in the workplace as being quite novel, and as a significant departure from 'Fordist' or 'Taylorist' systems of work organisation. Post-Fordists interpret current changes in the workplace as part of a widespread trend towards flatter management structures with greater autonomy and responsibility being given to shop floor/operative level staff. This is associated with a long-term trend of skill upgrading and multiskilling.

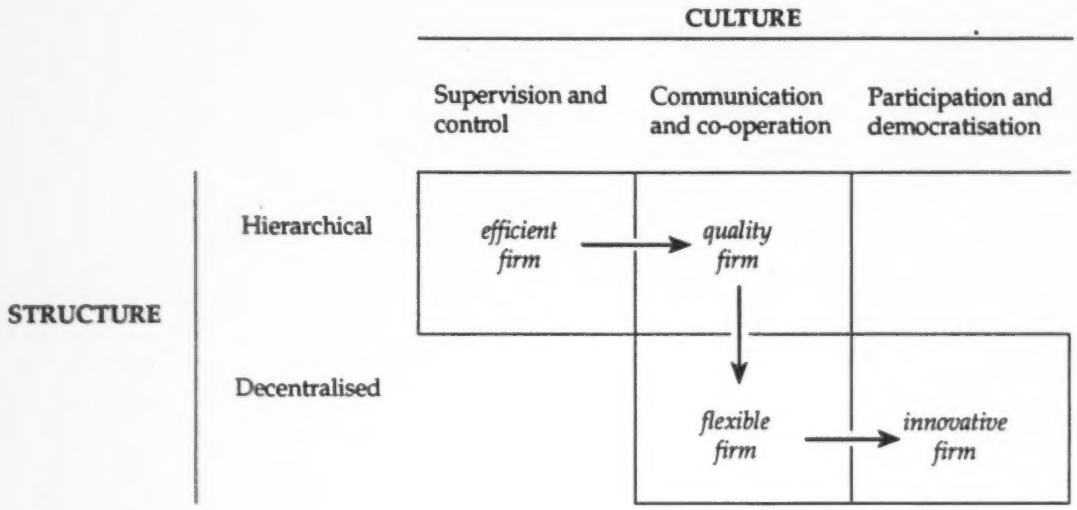


Figure 3: **Structural and cultural change pathway**

The four phases

Efficient firm
All efforts are directed at reducing costs in these companies: make it cheaper. The efficient firm produces a narrow range of products, tuned towards the mass production of standard goods. It delivers competitively priced products of—in most cases—substandard quality, when measured to present-day quality levels. Organisational design is based on the creation of simple, repetitive tasks, deemed necessary for the production of fairly complex products using cheap labour. New technologies develop at a pace yielding ample time for R & D departments to devise new generations of products 'at leisure'.

The efficient firm separates line from staff, operation from control, planning from execution and individual jobs are split up to yield repetitive tasks. The aim is to run down the learning curve as fast as you can, both by the separation of jobs and by increasing scale. Within the growing organisation, there is a mushrooming of ever more specialised staff functions. Managing is mainly planning and control. The organisation resembles a well-oiled, smoothly running machine.

Quality firm
All efforts are directed at the pursuit of quality as well as recognising the still necessary efficiency improvements. Quality is recognised as a strategic issue, for which top management's involvement and commitment are necessary. The whole of the company is involved in

a long-term process of continuous improvement, encompassing products and processes, top management and operators/factory workers. Everybody is convinced there is money to be made through quality. Doing things right the first time is the best and cheapest way to run a business. The many changes necessary to achieve this goal amount to nothing less than a cultural shock for the efficient firm. Close co-ordination exists between product development and engineering, as well as between the technical and commercial sectors. Customer orientation, one of the specific characteristics of quality firms, is also based upon greatly improved information feedback systems, systematically collecting data from such varied sources as factories, competitors and customers. Flawless products through manufacturing perfection is at the heart of the firm. Design for manufacturing and building is quality right from the start of development, ensure a minimum of engineering changes and a maximum of manufacturing quality.

Dedication and precision, so necessary for achieving perfection, calls for motivated employees. There is a spirit of co-operation, in which people are assessed on results and much attention is paid to horizontal and vertical communication. 'The customer is always right' simply is not up for discussion any more. Satisfying a customer is really more important than pleasing the boss.

Flexible firm

In addition to cost reduction and quality improvement, efforts are directed at increasing speed: minimise the time needed for 'ore-to-customer store'. This also holds true for developing and introducing new generations of products. The flexible firm offers a wide and varied assortment of products, suiting the individualisation trend of the affluent clientele. The firm has a strong external orientation, keeping in close contact with external development in such areas as technologies, competition and markets. Short manufacturing throughout times are achieved by continuous flow production of very small batches using, among others, synchronised cycle times and short resetting times. Both dedicated and mixed-model production lines are used, depending upon the turnover of the various models produced.

The organisational design is based upon the creation of fast feedback loops, enabling processes to react quickly to changes, while retaining their reliability. The functional organisation of the former efficient and quality firms has largely given way to product-oriented organisations, consisting of relatively autonomous product-market combinations; business units, in which all primary and directly supporting functions are present. Communication lines are therefore short, the number of hierarchical levels is limited and central staff groups are kept to a minimum.

Most manual work is carried out in groups, employing multi-skilled employees, responsible for day-to-day operations. The flexible mechanisations of the past have given way to flexible, often computer-aided, automation. Reducing the number of parts and components, designing families of products using standardised subassemblies and the production of CAD/CAM equipment all helped in speeding up the introduction of new products. At all levels extensive use is made of temporary groups, such as task forces and problem-solving teams, to deal with unforseen events. This contributes to a climate within which changes are regarded as a challenge.

Innovative firm

The innovative firm is characterised by its ability to co-ordinate technological developments, applicable in separate business units. This means that the Strategic Management of Technology, as it is often called, is an important activity. Outwitting competitors by changing the game, is an important part of the company's success. Considerable use is made of multi-disciplinary ad hoc teams, generally managed by experts coming from all over the country. Lines of command to the various teams change with time, depending upon the state of the activities concerned. Integrating managers exist to direct and co-ordinate the various activities both horizontally—from research through development and engineering to production—as well as vertically along the product axis from components to end-products. The traditional life-staff distinction has lost most of its significance as teamwork is the name of the game.

An innovative climate is created and maintained by such measures as the employment of mavericks, the use of an open-door policy, including the possibilities of hierarchical bypasses and the promotion of diagonal communication, supplementing the horizontal and vertical communication of the flexible firm. The innovative organisation is a learning organisation. Open relations are maintained with the outside world. As innovation is not restricted to new technologies, the results of creativity are not limited to the introduction of new products. They also lead to novel approaches in opening up new markets, setting up new organisations, designing new factories and offices, updating industrial relations and formulating new missions.

The know-how of people determines their contribution rather than their position. As so much value is placed upon know-how, there is a dual career line—one in management and a scientific one—which to a large extent eliminates the tension between hierarchy and expertise. Status symbols have also been eliminated to a great extent. The innovative firm thus succeeds in using the knowledge and expertise of all its employees. This makes participation and human resource management more than an empty slogan. Coming up with alternatives—a necessary ingredient for an innovative organisation—is encouraged through an informal, open atmosphere.

(Bolwijn and Kumpe 1990, pp.49-53)

An accurate analysis of industry trends and skill changes requires the differentiation of the various industry sectors. Some authors have criticised the post-Fordists because their analysis generally does not differentiate industry sectors but instead provides a simple global narrative of industrial change and skill upgrading.

Littler (1991) and Williams et al. (1987) argue that some sectors are changing contrary to the trend described by the post-Fordists. For example, service industries, white collar work and simple consumer-manufacturing industries (e.g. clothing, furniture, toys, and food processing) are viewed as undergoing a contrary trend towards a more intense Fordist approach to work organisation, with de-skilling rather than upskilling. Rates of technological change and work organisation change in these industries have, until recent years, been slower than rates of change in the complex consumer manufacturing industries (e.g. electronics, cars) and process industries (e.g. chemicals, oil). Also, there is little scope for flexibility in most continuous-process industries because each process technology is usually restricted to a single product or a very narrow band of products.

Award restructuring

In Australia the restructuring of industrial awards is an important part of the process of workplace reform. Each part of the reform process needs to be closely linked with the other parts. For example, any large change in job design usually would require changes to industrial awards, and would need to be supported by appropriate training.

Much has been written about the role of award restructuring in achieving international competitiveness for Australian industry. Recently, research has been published on the process of award restructuring and its success in achieving its objectives. Curtain and his colleagues (1991) have undertaken a series of case studies of award restructuring in various industries.

Curtain and Mathews (1990) have developed two models of award restructuring, and have termed these the *cost minimisation approach CMA)* and the *productivity enhancement approach (PEA)*. They describe the two approaches as idealised and extreme opposites of each other. The two approaches broadly correspond with the *superficial approach* and *strategic approach* to industry restructuring described by Hayton (1990). They also broadly correspond with the descriptions of the 'efficient firm' and the 'flexible firm' of Bolwijn and Kumpe (1990) discussed earlier. It is important to note that Curtain and Mathews' descriptions of their two models include various related aspects of workplace reform, in addition to purely award restructuring aspects.

The *cost minimisation approach* involves employers focussing on minimising costs through:

- restricted industrial negotiation;
- simple broadbanding;
- minimal (or no) commitment to training;
- payment for actual tasks performed rather than skills acquired;
- limited multiskilling;
- use of new technologies to intensify work;
- greater use of sub-contractors and casual employees to achieve optimum work runs.

This model is closest to maintaining the status quo by reinforcing practices established in the past. It involves little consultation between employers and unions to agree on broad agendas for restructuring; rather, employers and unions seek productivity 'trade-offs'. Examples of industries undergoing restructuring negotiations along the lines of the CMA approach include the building and construction and transport industries.

The *productivity enhancement approach* emphasises employer/union agreement on productivity issues that will benefit all parties. This model is characterised by:

- negotiation at the industry and/or enterprise level;
- multiskilling and teamwork encouraged;
- payment for skills and demonstrated competence;
- training commitment by employers;
- significant broadbanding;
- flatter organisational structure with responsibility increasingly delegated to the shop floor level.

An example of an industry undergoing restructuring in line with the PEA approach is the metals and engineering industry (Curtain and Mathews 1990, p.65). The approach most suited to an industry will depend on its past record of workplace and industrial reform, competitive pressures and

the enthusiasm of the involved parties for constructive reform. There is a likelihood that many individual enterprises will incorporate aspects of both approaches into their agendas.

The industrial relations stance of the productivity enhancement approach involves a co-operative rather than a confrontational approach, and this appears to be becoming more common in Australia and overseas (Mathews 1989). It is regarded as the best model for substantial workplace reform where quality and flexibility of products and services are the major objectives.

The cost minimisation approach has the advantage of providing identifiable, but potentially short term, cost benefits, but is unlikely to contribute to efficiency, quality and flexibility of firms in the long term. Curtain and Mathews (1990, p.73) summarise the impacts of the two approaches at the workplace as follows:

> *In Australia, the PEA agenda for award restructuring is attempting to establish reformist practices at the national and sectoral level, as well as at the level of individual enterprises. On the other hand, the CMA model threatens to undo this reform agenda. It will undermine the restructuring of wages, skills and work organisation at the enterprise level by reinforcing traditional confrontationist industrial relations.*

Skill requirements

Workplace reform is having a big impact on the skills required by the workforce. Consequently, substantial changes to vocational education and training are needed. The changing skill requirements are a direct result of the structural and cultural changes occurring in workplaces in Australia and overseas, as described above.

The structural changes involve a move away from hierarchical management structures and specialisation of skills to decentralised management structures with multiskilling. Various degrees of decentralisation and mutiple approaches are possible. One approach being implemented is the creation of semi-autonomous teams with short communication lines, fast feedback loops, and proximity to the market. This team has a product-market objective rather than a specialised functional objective. The team has responsibility for production/service delivery, quality and customer satisfaction. Operational and key support functions such as quality control and machine maintenance are the responsibility of the team. The team has the ability to react quickly to internal problems (e.g. production or quality problems) or changes in the external environment (e.g. market changes).

These types of structural changes have many skill implications, and these have been discussed in many papers and reports published here and overseas (see, for example: Bailey 1990, Bertrange and Noyelle 1988, Bolwijn et al. 1986, d'Iribarne 1987, Hayes and Jaikumar 1988, Hayton and Loveder 1990, Littler 1991, Mathews 1989, Shaiken et al. 1986). An important change is the need to extend people's skills so that they can undertake a wider range of tasks. This has been called multiskilling and is an essential part of the workplace reform strategy of many Australian enterprises. It enables small teams of workers to be largely self-sufficient in skills while carrying out product- or service-market functions. It also allows flexibility of work organisation within each team, enhancing the ability to handle problems.

Communication skills and inter-personal skills are becoming more

important in decentralised work organisation structures. In particular, abilities that contribute to team building are recognised as increasing in importance. In many workplaces in Australia there are high proportions of workers from non-English-speaking backgrounds and workers with low literacy levels. Workplace communication problems are becoming acute in these cases where workplace reform is being implemented. Government and industry programs to improve English-speaking and literacy skills of workers have recently been stepped up to address this problem.

Implementing flexible, decentralised structures requires changes of attitude at all levels in the enterprise. Day-to-day control of production or service operations needs to be delegated from middle managers to team members. Managers must be prepared to relinquish some of their traditional tight control over most aspects of production or service operations, and operators must be prepared to accept greater responsibility for production and quality objectives. New process technologies give enterprises the choice of centralising or decentralising control. Research indicates that firms in the US are giving up the opportunity to decentralise control. Shaiken et al. (1986) concluded from case studies of US manufacturing firms in the early 1980s that programmable technology and flexible manufacturing systems were being implemented in a way that tended to increase production control by managers, rather than increase control at the shop floor level. This contrasts with the trend towards greater shop floor control in European manufacturing firms. There has been little published research in Australia on this issue.

In addition to structural change, 'cultural' changes are occurring in workplaces. Reformed workplaces have cultural characteristics of communication and co-operation rather than an emphasis on supervision and control (Bolwijn and Kumpe 1990). Additionally, participation and democratisation are characteristics of the innovative firm. Significant changes in attitudes are required by people at all levels in the organisation in order to attain these characteristics in the enterprise. The US Manufacturing Studies Board (1986, p.21) defines the 'culture' of a plant as the pattern of beliefs about what is right, important, or acceptable, shared by the people who work there. Figure 4 lists the changes in practice the board believes are needed to implement effectively advanced manufacturing technology.

Organisational aspect	Traditional practice	Shift to practice compatible with advanced manufacturing technology
▪ Authority	▪ Base on position	▪ Base on knowledge
▪ Decision making	▪ Locate close to the top	▪ Locate close to required action
▪ Employee	▪ Has limited knowledge and skill	▪ Enhance knowledge and skill
▪ Information	▪ Control closely	▪ Share widely and use a number of media
▪ Rewards	▪ Reward individual performance	▪ Reward teamwork and collaboration
▪ Status	▪ Highlight differences in attire, parking, eating facilities, and so on	▪ Mute such differences
▪ Supervision	▪ View supervisor as 'watchdog'	▪ View supervisor as resource

Figure 4: Plant cultural change required to introduce advanced manufacturing technology (adapted from Table 4 in Manufacturing Studies Board 1986, p.22)

It is clear that workplace reform will bring great changes to the skills required by the workforce, particularly at operative level. Operatives in manufacturing and service organisations will need higher-order skills, especially critical thinking and problem solving. For example, the common approach to continuous improvement involved the encouragement of analysis and discussion of problems by small groups of workers. Many operative and maintenance workers still need a combination of specialised technical skills and understanding of systems. In addition, as discussed above, they will need new attitudinal qualities. These changes are described by d'Iribarne (1987, pp.8–9) as follows:

> *Operatives and their supervisors are now expected not just to react to events and single incidents but to anticipate them and take action. This broadening of the abilities demanded is radically changing the basic skills needed. Operatives must be capable of analysing and thinking for themselves. In addition to their basic technical knowledge, they must be capable of lateral thinking so that they can apply that knowledge within certain frames of*

action. They must also possess what, for want of a better term, will be referred to as the 'behavioural and attitudinal qualities' of forethought and commitment to the work they do. These will be determined by their 'social skills', their value systems and, in the final analysis, their education. It is altogether logical that the new skills expected of workers extend far beyond technological expertise, raising the question of what basic standard of education is required of skilled operatives.

In enterprises that decide to include innovation as part of their competitive strategy, the creative abilities of the workforce will be important. In the innovative firm described earlier, the whole culture of the organisation encourages creative contributions from all employees on a full range of enterprise concerns, including developing new products and services, opening up new markets, setting up new business units and improving processes and procedures.

Implications for vocational education and training

It is difficult to be precise about the implications of workplace reform because of the uneven rate of change and variation in the nature of changes between industry sectors. The following discussion of the implications of workplace reform for vocational education and training is based on the premise that workplace changes seen to be emerging in enterprises in Australia will continue and will spread to most industries, and that, broadly, the nature of the changes will be similar to trends documented in the United States and Europe.

The need for a more skilled workforce associated with workplace reform is expected to have an overall effect of greatly increasing the demand for vocational education and training in Australia. The increased demand is being driven both by industry needs and by government policies.

Government policies on vocational education and training aim to increase the quantity and quality of vocational education and training to support workplace reform. The report of the Australian Education Council Review Committee of 1991 (the 'Finn Review') recommends that a target should be adopted of almost full participation in vocational education (or academic courses) for 20-year-olds by the year 2001.

In the 1990s the completion of an appropriate initial vocational education course will be required of most people entering the workforce. The change will be marked for occupations which formerly were described as 'unskilled' or 'semi-skilled'. For operator-level occupations in manufacturing, for example, an entry-level TAFE course entitled Engineering Production Certificate is currently being developed nationally.

The Commonwealth Government is expecting a large increase in training effort by industry. To promote more training expenditure by medium to large size enterprises, the government introduced the Training Guarantee Act in 1990. Enterprises with payrolls greater than a specified minimum are required to spend a minimum of 1.5% of their payroll on 'structured' training. Various Commonwealth Government and State Government initiatives are aimed at widely introducing competency-based training into TAFE with the expectation that this will greatly improve the quality, relevance and flexibility of TAFE's vocational education courses. Such policies are discussed in some detail in chapter 2.

The restructuring of industrial awards, with provisions for the establishment of skill-related career paths, is also contributing to the push

for a more skilled workforce in Australia (Curtain and Mathews 1990). Skill-related career paths give employees incentives, such as increased pay and more satisfying jobs, to progress along the career ladder. Vocational education and training will need to be provided to support this progress. Indeed, unions and employees themselves are demanding that such training be provided. Examples of skill-related career paths are described in the case studies.

Several writers have discussed TAFE's response to the expected surge in demand for vocational education and training. Wood (1989, p.3) estimated that at least 10% of Western Australia's workforce would require post-initial training to meet the requirements of the Structural Efficiency Principle in the short term. He calculated that if TAFE was required to meet this demand, this would increase TAFE's current enrolments by 50%. It is important for TAFE to consider its capacity to meet the demand for vocational education and training that will result from award restructuring and workplace reform, and to develop strategies for meeting the demand.

Workplace reform is also affecting the type of vocational education and training required, and this will present many challenges for vocational educators and trainers in industry. A report by the State Training Board of Victoria describes the qualitative impact of workplace reform on TAFE as follows:

> *The challenge for TAFE, it is argued, lies more in the qualitative aspects of its operations—in reaching an understanding of how the process of skills acquisition, recognition and deployment is changing in industry; and in adjusting its programs to make them more flexible, responsive and coherent in complementing and working with industry training activities that are triggered by award restructuring. (STBV 2989, p.1.)*

Vocational educators and trainers will be asked to help bring about changes in the content of programs, course structures, and teaching methods. It is expected that vocational educators and trainers will broaden their roles, increasing their involvement in needs analysis, program development, accreditation and evaluation. We are seeing an increase in co-operative training arrangements between industry and vocational education providers, especially TAFE, as a means to provide high quality education and training that keeps up-to-date with changes in technology and work organisation. It is likely that TAFE teachers will help to negotiate these as well as conduct programs at industry sites and training centres.

The structural changes in work organisation, involving a move away from centralised to decentralised management and the formation of semi-autonomous work teams, mean changes in the skills required for each member of the workforce. The range of skills required will vary considerably among enterprises and among work teams; however, in general some specialisation of skill is likely to continue but each worker will require a wider range of technical skills to give the flexibility that will be required of work teams. This requirement, often termed *multiskilling*, means it is likely that vocational courses will need to provide a broader range of skills.

Vocational courses will need to have flexibility to provide different mixes of skills for different individuals. Two ways of achieving this flexibility are:

- offering a wide range of short courses and training programs so that

individuals can choose any combination of courses and undertake additional training when required;

- offering longer courses with course structures that allow high flexibility—an example of this is the new national trade certificate course for the metals industries. The course has a modular structure which allows individuals a high degree of freedom to choose various combinations of modules.

As described earlier, cultural changes in the workplace will be required to achieve simultaneously efficiency, quality, flexibility and innovation in products and services. In particular, this means that new attitudes and an expanded range of non-technical skills will be required, as workplaces change to a culture of communication, co-operation, participation and democratisation. The workforces of enterprises making these transitions will need a wide range of 'higher order skills'. Such skills include: analytical and planning skills, logical and critical thinking, creativity, team skills, and communication skills. To develop these skills, the content and methods of teaching of vocational education will need to be revised.

A further challenge facing vocational teachers and trainers is the need to justify greater amounts of resources for vocational education and training. The relationship between vocational education and its economic benefits is not a simple one, so the task for vocational educators is not easy. Part of the answer is to help decision-makers view higher skill levels, and vocational education and training, as a vital component of the competitive strategy for the enterprise and the industry. The following case studies indicate the importance of vocational education and training in the competitive strategies of these enterprises. They also suggest areas where TAFE should consider changes to its range of services and approach.

Chapter 2 Case study: Printco (NSW)

Introduction

Printco is the pseudonym for an enterprise which has agreed to publication of this study but the enterprise does not wish to be identified.

Printco is located in rural New South Wales and is part of an Australian company established in the 1930s to supply newsprint to the Australian newspaper industry. The company operates two paper mills, the sister mill of the NSW plant is located in Tasmania. Together the two mills manufacture approximately half a million tonnes of newsprint per year (about 80% of the market). The Tasmanian mill, the company's original plant, commenced operations in 1941 and makes a range of speciality papers based on eucalypt and pine pulps including telephone-directory and off-set printing grade.

The NSW mill, which is the subject of this study was opened in 1981, produced only newsprint and supplied about 30% of the Australian market. At the time Printco represented the state-of-the-art in paper production technology incorporating one of the world's fastest paper making machines (1200 metres of 8.5 metre width paper per minute), thermomechanical pulping (TMP) and world-class effluent treatment facilities.

The company also manages a number of pine plantation forests which supply the mills with the wood thinnings that form the basis of the feedstock in the paper production process. Uncertainty over the future of logging in crown estates and the impact of the environmental movement on public attitudes to the forestry industry are compelling the company to become more heavily involved in plantation management in order to secure a continuous supply of raw materials to the mills.

Printco is owned by a well-established forestry and energy multinational and a large Australian media group; each has a 50% share in the company although there is some doubt over the future of the media group's investment. In recent years the company has been marginally profitable with an annual, turnover of around $350m and a profit of about $8m. The NSW mill contributed about $170m of this turnover in 1990.

The newsprint industry has never enjoyed the benefit of tariff protection, and the company neither exports any product nor appears to have immediate plans to do so. Expansion programs are therefore constrained by the size of the domestic market which is fairly mature, expanding at a rate of only 2-3% per annum.

Nevertheless, despite its stability, the demand for newsprint in Australia is changing. This is occurring as the newspaper companies change over to offset printing in order to introduce colour into the papers. The move to offset is happening quite quickly with 80% of newspapers predicted to be printed using this process within two years. Colour printing and offset, however, require a higher grade of paper than is currently produced by the company. As a result the company wishes to introduce a form of bleaching known as 'brightening' to the NSW operation in the next 12 months. The brightening process is regarded by management as

critical to the future of the mill which is already unable to meet 50% of the market's requirements as a result of sub-standard colour; a percentage which will rapidly increase with the diffusion of offset printing. The brightening process involves the use of hydrogen peroxide and the company's plans to introduce the new treatment are meeting significant local opposition on environmental grounds. The company's position is that their expertise in effluent treatment will render the problem negligible and that the mill will enter a period of slow decline and eventual closure if brightened paper is not produced.

Human resources and industrial relations

The mill currently employs about 350 workers. Production workers account for approximately 100 of these, with another 80 skilled maintenance workers and the balance comprising non-trades workers (riggers, crane drivers etc.), staff and management. Another 200 are employed in the forestry operations in the surrounding area, which includes planting, forest maintenance, harvesting and transport. The workforce is largely drawn from the locality and displays are high degree of homogeneity, suffering few of the language and ethnic relations problems associated with the multicultural workforces of the metropolitan areas. The mill works 24 hours per day, 365 days per year. As a result production workers are split over five separate shifts; an arrangement that often gives rise to the usual communication problems associated with shift operations as managers on day shift find it difficult to make contact with employees on different shifts.

The mill is covered by a site award, the Newsprint Industry Award; a federal award established when the mill opened in 1981. The Tasmanian mill is covered by a similar award. The blue collar workforce is completely unionised and there are four unions on site. The Printing and Kindred Industries Union (PKIU) represents the production workers, the Metal and Engineering Workers Union (MEWU) and the Electrical Trades Union (ETU) represent the tradespersons and the Federated Engine Drivers and Firemen's Association (FEDFA) represents a small group of production workers in the steam plant and log yard. Staff and managers (including supervisors) are non-unionised. The small number of unions is regarded by the company as a major advance on the situation at the Tasmanian mill which is covered by eleven unions.

On the surface, the industrial relations climate at Printco is very calm with only a few days lost to disputes in the past few years. This was not always so however, as the mill went through a very turbulent period in its early days after construction. A number of smaller disputes in 1981 culminated in a lengthy dispute during the winter of 1982 over recognition issues at the mill. The PKIU and the Pulp and Paper Workers' Federation (PPWF) were locked in a struggle to represent production workers at the plant. The company, in accordance with the award, recognised the PKIU and sacked 42 workers for disobeying instructions not to attend PPWF meetings in works' time and deserting their jobs. The company were prosecuted for discrimination on the basis of trade union membership but were acquitted in the Federal Court. The dispute was eventually resolved in favour of the PKIU and industrial relations quickly settled down until 1989-90, when two minor disputes caused the loss of two days production in each year; the latter dispute connected with restructuring.

Nevertheless, the lack of disputation does not necessarily reflect an underlying spirit of industrial harmony. There is an element of mistrust and mutual suspicion which pervades the industrial climate at Printco.

The fact that this rarely materialises into confrontation is testimony to the realistic and pragmatic nature of both managers and union delegates at the mill; however, the fact that consultative mechanisms and joint union bargaining did not exist in any form until the emergence of the structural efficiency principle underlines the historical lack of trust between both managers and unions and between the different unions on the site. The negotiations over award restructuring have served to bring some of these underlying tensions to the surface, with a consequent increase in the level of disputes in the last two years. Some parties to the negotiations feel that award restructuring could be said to be having a counter-productive effect on industrial relations as a result.

Award restructuring and workplace reform

Working practices and work organisation at Printco had already been addressed before the advent of award restructuring. The agreement reached under the 1987 National Wage Case had resulted in the elimination of some minor demarcations, notably the restructuring of classifications at the bottom end of the production grades where the old positions of 6th Hand and 5th Hand had been abolished and provision for job rotation within production crews introduced, although restricted to those lower levels of workers. The limitation of classification changes and job rotation to the lower levels of the production hierarchy resulted in very little consequent change to work organisation in the mill. Perhaps the most innovative changes occurred in the trades area where agreement had been reached in 1986 to cross-train electricians and instrument fitters. This training, provided through the local TAFE college, had been completed for electricians in 1990 but has yet to be completed for instrument fitters. As a result electricians have received substantial pay rises of between $60 and $80 per week. For the company, the benefits to be gained by this kind of cross-skilling are substantial. As a continuous process operation, maintenance workers are employed on day shift only when most of the preventative maintenance and installation work is carried out. Outside day shift hours managers rely on 'call out' arrangements for breakdowns. The generous penalty rates associated with call out for the maintenance workers involved represent a substantial labour cost to the company. Any amalgamation of trades, therefore, will have an immediate impact on labour costs as fewer tradespersons will need to be called out to attend breakdowns.

Responding to union claims under the 1989 National Wage Case the company established a Structural Efficiency National Committee comprising federal union officials and senior company management. Substantive negotiations over award restructuring were, however, devolved to each of the three business operations, the two mills and the forest management division. Each of the businesses established a joint consultative committee composed of equal numbers of union representatives and management personnel. The consultative committee for the NSW mill consists of the four union delegates and four managers led by the personnel superintendent (including one foreman). None of the senior management team sits on the committee. The role of the consultative committee is to:

- consult on the implementation of the new classification structure;
- review the overall program of award modernisation;
- consult on the operation of the training committee (see below);
- promote positive co-operation in the implementation of award restructuring and the improvement of enterprise efficiency.

The consultative committee has met regularly at Printco since late 1989. It was further intended that each site would establish a training committee

with equal numbers of management and union representatives to oversee the training programs arising from the implementation of structural efficiency. It would also act as a committee of appeal for employees with grievances concerning reclassification or access to training. The training committee was formally established in early 1991.

The national committee reached agreement on the operation of the structural efficiency principle in the company in August 1990. The Structural Efficiency Principle Agreement lays out the guidelines for the implementation of the consultative mechanisms, training, skills profile groups, reclassification and the ensuing payments, adult apprenticeships and traineeships (under the Australian Traineeship System) and modernisation of the existing site awards. The agreement was ratified by the Industrial Relations Commission in November 1990, triggering the second payment under the 1989 wage case; the first payment had already been made for progress in reclassification.

Progress within the mill, however, proceeded at a relatively cautious pace. The consultative committee, despite frequent meetings, had become deadlocked for the first few months over a list of demarcations *(incidentals and peripherals)* tabled by management at an early meeting. The deadlock created feelings of frustration and resentment amongst all members of the committee and had inhibited the formation of a sense of joint purpose between union delegates and managers. Nevertheless the old style of confrontative negotiation gradually gave way to a more constructive and co-operative approach as difficult issues were referred to the national level and the members of the committee became increasingly skilled in the art of consultation. The PKIU delegate was given the role of full-time convenor for the unions for a fixed period during the award restructuring exercise and, whilst this move was the subject of some debate between the parties (including a two-day stoppage at the mill), it underlined the importance which both sides attached to the outcome of the structural efficiency agreement.

The new classification structure based on the Metal Award was adopted although not implemented until late 1990. In the trades area the new structure consolidated the amalgamation of the instrument fitters and electricians. Three distinct career paths have been created for mechanical fitters, electricians/instrument fitters and non-trades such as riggers, crane drivers etc. Each of the two trades streams have been separated into two sub-streams; fitting/machining and boilermaker/welder in the case of the mechanical trades and electrical and instruments in the case of the electricians. The non-trades level career path has only two levels below the base trades level and is common to both streams. As a result, non-trades activities are effectively subsumed under the skilled tradesperson, eliminating one of the major demarcation problems in the mill. In the production area, demarcations centre on the ability of the production worker to carry out simple maintenance tasks and non-trades activities. These 'incidentals and peripherals' are still the subject of discussion by the consultative committee.

In preparation for the implementation of the new structure, a comprehensive task analysis was carried out. The magnitude of this task, in an organisation where few job descriptions existed, was beyond the resources of the training department. As a result, the training manager commissioned an external consultant who had experience of task analysis from the defence forces to carry out the task analysis in the skilled trades area. Using a group-based technique similar to DACUM, the consultant drew up profiles of all the skilled jobs in the mill. The training manager

carried out the task analysis of the production areas himself. Here a method based on individual interviews with a sample of operators was adopted. In fact some 60% of the mill operators were personally interviewed by the training department.

This work provided mill management with a clear perspective on the nature of the jobs that currently existed at the mill. The process still awaits, however, the further step of an analysis of existing skills at the plant and the delineation of the future skills requirements for the operation. The final phase of training implementation awaits the refinement of the new classifications.

The company has devoted substantial time and resources to the restructuring process. The consultative committee meets regularly and at some length and considerable time has been invested in the task analysis; however, with the exception of the secondment of the PKIU delegate, no full-time positions have been created to facilitate award restructuring at the mill.

The management view

The attitudes and views of management about the prospects for award restructuring must be set in the context of the cost structure of the mill's operations. Printco is a highly capital-intensive plant which, although only ten years old requires regular refurbishment in order to keep pace with the level of technological change in the pulp and paper industry. Capital expenditure and servicing account for about 40% of the mill's total costs each year, excluding major refurbishment projects such as the installation of a newsprint recycling facility or the upgrading of the paper machine to increase output by 25% both of which are under active consideration by the company for the NSW mill. After capital, power (i.e. electricity) is the largest consumable item accounting for 30% of total costs. Raw materials in the form of pine logs account for a further 18%. Labour cost is therefore quite low at about 12% of total operating cost per year. As a result, managers at the mill tend to think about the competitiveness of the operation primarily in terms of the efficient utilisation of the paper-making machine i.e. keeping it running; with downtime costing in excess of $15000 per hour, the machine is the natural focus on management attention. All of these factors, particularly machine efficiency, have a greater potential impact on cost and competitiveness than the utilisation of labour, although this remains an important issue in the eyes of management.

The general opinion of managers at the mill is that the plant does not unduly suffer from the effects of demarcations. Those demarcations that do exist, especially those between production and maintenance workers, carry only a slight penalty for the cost structure of the mill resulting in, perhaps, one or two heads surplus to actual requirements on the payroll. In the context of the overall level of labour costs in the operation, it is not difficult to understand why the implementation of the structural efficiency principle may not be regarded as significant priority by some managers. Nevertheless, other managers take the view that the successful implementation of award restructuring has the potential to close the narrow gap between the current level of mill efficiency (about 80-85%) and a truly world class performance of around 85-90% efficiency. In management's eyes the key to this level of efficient working lies not so much in the radical restructuring of work organisation but in the acceptance by the workforce of performing a wider range of duties which are incidental and peripheral to their jobs. These incidentals and peripherals which have formed the basis of management's input into the

award restructuring process include such things as:

For production workers:
- use of cranes for normal production purposes
- additional maintenance inspections and routines
- cleaning photo cells
- renewal/replacement of air/water hoses and nozzles for production workers

For maintenance workers:
- use of forklift trucks when required
- crane driving work
- removal of bearings and couplings by electricians for maintenance workers

Other managers, however, take a more pessimistic view of the potential for award restructuring. For them the benefits to be gained through the implementation of SEP are at best marginal to the efficiency of the plant for the reasons discussed earlier. They view the protracted and sometimes acrimonious nature of the consultative committee's deliberations with some alarm. The process seems to have led to an increase in disputes and a deterioration in the industrial relations climate at the mill; the reverse of what award restructuring is intended to achieve. Change is certainly necessary, particularly in the area of incidentals and peripherals, but it might be more effectively achieved through the exercise of management leadership rather than through the cumbersome consultative processes of award restructuring. Award restructuring may even be described as an obstacle, rather than a catalyst, for change.

The existence of these two conflicting views, with individual managers sometimes see-sawing between two extremes, has made it more difficult for the management representatives on the consultative committee to present a clear and unified 'vision' of the outcomes they expect of the award restructuring process.

The union view

There exists a relatively high degree of consensus between the four union delegates at the mill on the need for restructuring and the issues that should be addressed in the process. The general ACTU/ALP vision of a more highly skilled and competitive Australia informs the views of all the delegates, partly as a result of the training courses they have attended together at Trade Union Training Authority (TUTA). The fact that the four delegates also constitute the union side of the consultative committee has led to the formation of a fairly consistent approach to the issues involved in restructuring. For the unions the issues largely centre on the establishment of career paths, multiskilling to create more satisfying work over which the worker has a higher degree of control, better pay and the recognition of skills especially in the production area. Generally, the delegates feel that whilst these issues are being addressed in the trades areas through the multiskilling of electricians and instrument fitters and the absorption of non-trades work, similar progress has not been achieved in the production areas represented by the PKIU and FEDFA. It is in the interface between production and maintenance work that differences begin to appear between union positions. Electricians and, to a lesser extent, mechanical fitters are reluctant to allow too great a part of their work to be transferred to production operators for reasons of safety, regulation and job security.

Like managers, the union delegates have not been very happy with the progress of negotiations in the consultative committee. They viewed the first few months of the committee's existence as a running battle with managers, intent only on the elimination of demarcations without substantive discussion of what they considered to be the broader agenda of workplace reform. This position improved in late 1990, as the committee settled to the task of implementing the new classifications and carrying out a skills audit. Nevertheless, all the delegates feel that the committee has been worthwhile from the unions' point of view as it has brought them together in a way that has not occurred before on the site. They recognise their common interests and see the strength of a united response to management through a joint committee structure. The question of union amalgamation and the appointment of a principal union at the mill has caused the smallest union on site, FEDFA, to feel rather vulnerable in the process of award restructuring and tend to distance itself from the positions adopted by the three main unions.

Despite their enthusiasm for the ideals of restructuring, the unions still view the intentions of management with some suspicion. They cite the Tasmanian mill as both the source of some of the problems in Printco and, paradoxically, an example of how those problems might be resolved. The Tasmanian Mill is sited in a small 'company town', breeding a very paternalistic style on management which, the unions feel, was imported to Printco at its inception. That style has made managers at the mill unwilling to tolerate a contrary union position and to adopt a fairly directive approach to running the operation; however, the poor trading performance of Tasmanian mill in recent years has led managers at that site to adopt a more open style of management, encouraging the formation of self-directed work teams in an effort to transform the work environment. The unions feel that managers at Printco, as a result of its profitability, are unwilling to make fundamental changes to the way in which the operation is managed.

TAFE involvement

Printco has a long history of association with TAFE, spanning both the NSW and Victorian systems as a result of its unusual border position. Most involvement has reflected the traditional TAFE contribution of off-the-job apprentice training; the mill recruits a consistent number of apprentices each year.

Outside apprentice training, TAFE has provided the mill with a number of training courses related to the trades area such as hydraulics, crane rigging, crane driving and fork-lift truck programs. TAFE involvement in the restructuring process at the mill, however, has been minimal, although this situation may change somewhat as multiskilling increases in the future. Nevertheless, the mill has tended to use the services of external consultants in activities such as the task analysis and devising the training programs to support the SEP agreements. This reflects a general perception among the managers at the mill that TAFE locally does not possess the skills to make a significant contribution in this arena. Printco is, however, quite willing to employ the services of TAFE if it can meet the cost and quality standards of other external providers. In too many cases, unfortunately, this does not appear to be possible. Specifically, the mill management voiced a number of concerns about TAFE provisions:

- TAFE is often unwilling to devise training packages tailored to the exact needs of the client, preferring instead to offer 'off the shelf' solutions which may not suit the client.
- Because of their rural location, the local TAFE colleges cannot always offer the necessary programs. Thus, although NSW TAFE offers the

Hydraulics 1 program, students who require the more advanced Hydraulics 2 program may have to go as far afield as Wollongong to find the necessary training.

- TAFE schedules may be too inflexible for employers on some occasions. For instance the classic day-release pattern for apprentice training has involved clashes with planned maintenance days at the mill, resulting in trainees losing a substantial number of opportunities for on-the-job training. Other instances would include the lack of services provided over the Christmas break in January when employers may require urgent training.
- A lack of consistency between the NSW and Victorian systems. Although colleges on both sides of the border may offer the same training, specific programs often differ in title and content causing confusion for employers attempting to assess the relative merits of different offerings. This lack of consistency is not, of course, a problem unique to Printco's locality.

This latter point highlights the comparison that is always made in these situations between rival TAFE systems. The general view of mill managers seems to be that the NSW system is considerably less flexible and responsive to the needs of employers than the Victorian system. This shows itself in a variety of ways. Victorian proposals are often more realistic in terms of cost as a result of a more flexible approach to pricing. NSW TAFE appears to be less capable of negotiating on prices. Victorian TAFE staff are more willing to tailor offerings for the client and enter in joint design arrangements than their NSW counterparts. Victorian TAFE appears to be more proactive in marketing its services to industry and maintaining its relevance to employers than NSW.

These views are, however, impressions. The reasons behind these differences between the two TAFE systems are more likely to be a result of structural discontinuities than any contrast in the abilities of local TAFE staff. Nevertheless, it seems to be rather disappointing that, presented with so many market opportunities for its unique services, the TAFE system is not able to rise to meet the challenge of industry and award restructuring.

Chapter 3 ALCOA of Australia Limited, Point Henry, Victoria

Introduction

ALCOA of Australia is a fully-integrated aluminium producer with assets exceeding $3100 million in 1989. It operates four bauxite mines, three alumina refining plants and conducts various other mining and smelting activities throughout Australia. The company directly employs more than 6500 people nationally. The Point Henry smelter, which is the focus of this case study, currently employs 1626 people and produces aluminium ingots and rolled products for export and local consumption.

This case study outlines the company's restructuring approach and details the major processes undertaken. Emphasis will be on the company's human resource strategies associated with award restructuring; especially, changes to work organisation, job redesign and training. Training links with TAFE will be discussed, especially the relationship between ALCOA and the Gordon Technical College through specific fee-for-service in-company training for maintenance trades people.

The Point Henry plant has four production divisions, reflecting each main area of its activities. The four departments are:

- electrode division
- pot room
- ingot mill
- rolled products division

This structure is supported by various service groups including: central maintenance, clerical support and canteen. The following diagram describes the plant's structure and a breakdown of activities.

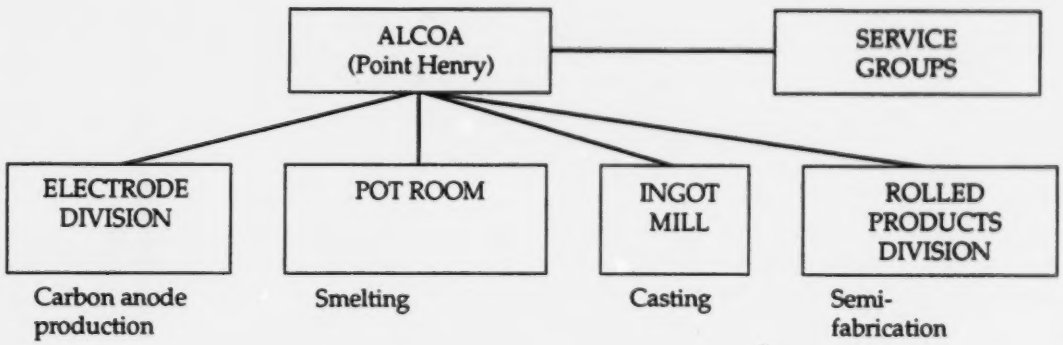


Figure 3.1: ALCOA, Point Henry: operations structure

The plant is operational 24 hours a day, seven days a week, requiring four shifts.

Competitive strategy

ALCOA's present competitive strategy evolved during a period of major company-wide rationalisation. The dramatic slump in the value of aluminium products in the early 1980s forced management to re-assess the company's priorities and strategic goals. Greater emphasis was to be directed toward training and development programs to meet productivity improvement objectives. Management functions and corporate responsibility were to be decentralised, and based on improved decision-making and communications between the various facets of the operation.

At the shop-floor level, field maintenance for both electrical and mechanical trades were to become more integrated, and greater responsibility for the overall control of maintenance was to be devolved to all employees within each department. It was recognised early that a key part of the change process would be the restructuring of industrial awards at ALCOA.

Industrial relations

From the initial opening of the Point Henry plant, employees have operated under the ALCOA of Australia (Victoria) award. The award is an 'enterprise agreement', and allows ALCOA some flexibility in award negotiations, subject to compliance with national guidelines.

Four major trade unions are represented at ALCOA and are currently participating in award restructuring negotiations. These are the Metal and Engineering Workers Union (MEWU), Australian Workers Union (AWU), Electrical Trades Union (ETU) and Federated Ironworkers Association (FIA).

ALCOA's industrial relations climate is relatively calm with only a single stoppage in the last three years. Employees represented by the ETU stopped work due to a statewide stoppage on electrical licensing and work cover issues not originating at ALCOA. The MEWU held one stop-work meeting in late 1991 to discuss award restructuring.

ALCOA has developed a disputes procedure in conjunction with the represented unions. When a dispute is identified, both parties agree to a 14-day 'cooling-off' period where the issue(s) of concern are debated and its/their resolution sought internally. If resolution cannot be reached, mediation is sought through the Industrial Relations Commission (IRC). The whole dispute resolution process has become more 'clear-cut' due to increased consultation. An attitude of co-operation and consultation is developing, rather than an attitude of confrontation. In the past, some sections of the plant had industrial relations environments characterised by confrontation.

Workplace reform and award restructuring

Award restructuring and workplace reform at ALCOA are complex and have involved a number of stages spanning several years. The key stages are shown in the following flow diagram.

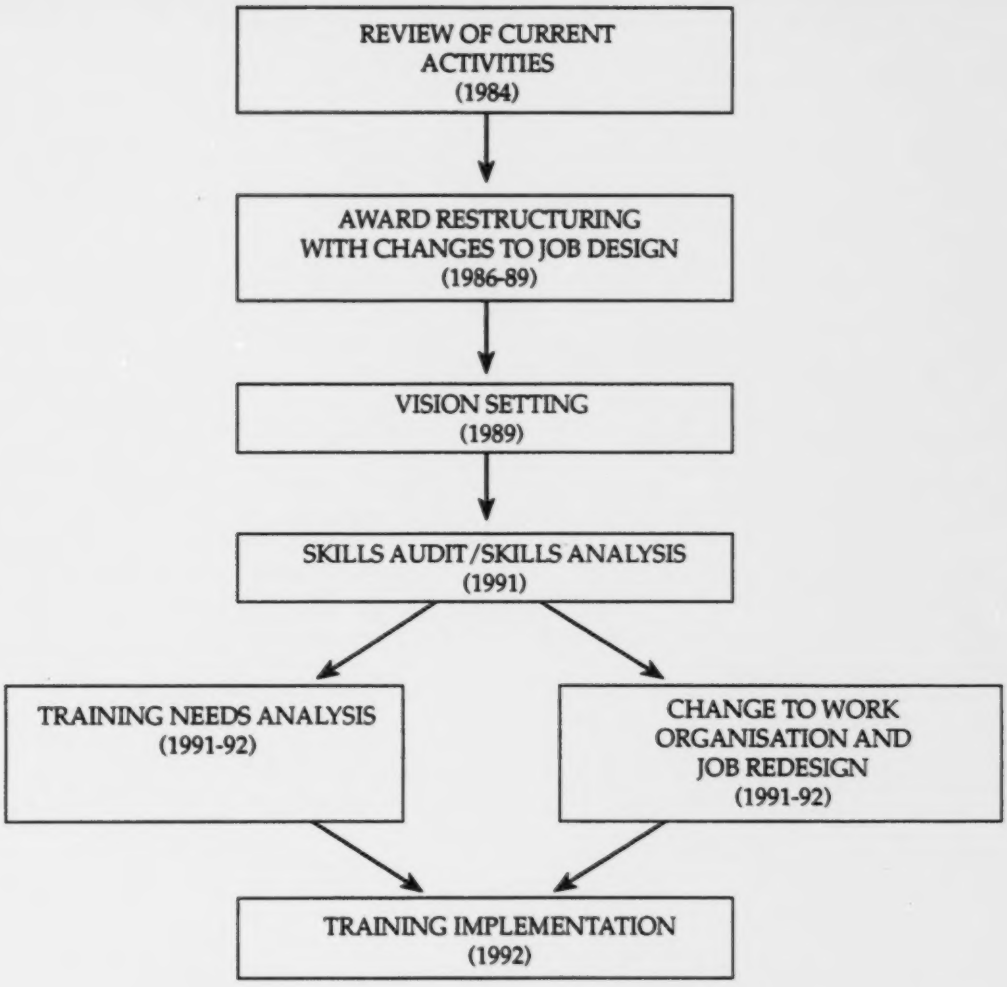

REVIEW OF CURRENT ACTIVITIES (1984)
AWARD RESTRUCTURING WITH CHANGES TO JOB DESIGN (1986-89)
VISION SETTING (1989)
SKILLS AUDIT/SKILLS ANALYSIS (1991)
TRAINING NEEDS ANALYSIS (1991-92)
CHANGE TO WORK ORGANISATION AND JOB REDESIGN (1991-92)
TRAINING IMPLEMENTATION (1992)

Figure 3.2: Restructuring and workplace reform at ALCOA, Point Henry

The process of workplace reform and award restructuring initially commenced in 1984 with a series of wide-ranging reviews of ALCOA's operations, with the objective of improving the plant's international competitiveness. A consultative process was initiated, whereby problems were identified, discussions held with employees, union representatives and management, and solutions defined. The reviews were followed by work value cases associated with award restructuring. The outcomes of these reviews and award restructuring were changes to work organisation and job design, including the establishment of four business areas and wage increases for some trade and production personnel.

The complexity of award restructuring at the Point Henry plant reflects the different players involved. Separate work value cases were initially conducted with each union, and in at least one trade area, this process is still continuing. The company feels that the work value cases did not bring about the cultural and attitudinal changes desired by the company. Because of this, a new phase to reform was initiated in 1989.

ALCOA adopted a total systems approach to restructuring, characterised by consultation at all levels. Management and unions in late 1989 participated in a 'vision setting' exercise to determine the company's priorities in restructuring. One outcome was the agreement to

incorporate safeguards for the workforce. The major safeguard was that no one individual would lose his/her job forcibly as a result of restructuring.

Some of the priorities for restructuring identified in the vision-setting exercise included:

- establishment of a team-based approach to work organisation in all areas;
- skill sharing between operating and maintenance employees;
- establishment of a foundation for continuous improvement which will ensure an ability to bring about change on an ongoing basis;
- integration of excellence through quality training modules into skill formation and job classification structures;
- improved international competitiveness as a result of totally revised work arrangements with a consequent workforce reduction in excess of 10%; and
- pay structures based on skills development.

The next step was to convene two steering committees in early 1990, one each at both the Point Henry and Anglesea operations. At Point Henry, the committee was composed of five managers and six union representatives, whose role was to facilitate and guide the process.

Responsibility for determining how the process should proceed and the training requirements resulting from this was vested in the six job-design teams set up in early 1990. The six design teams; three from operations, two from support and one maintenance group were charged with the responsibility of determining training areas by looking at the technical and human resource sub systems of the plant. Using a socio-technical approach, the teams determined what plant employees wanted from the process; and these included:

- greater autonomy
- shared skills
- productivity improvements
- pay structure based on skills
- multi-skilling
- maintenance personnel to increasingly be involved in value-adding activities
- be in charge of the process

Team members were also encouraged to think about the technical and human resource factors which affected productivity at the plant and possible solutions to them. Productivity fluctuation, it was recognised, was often more a result of work design than employee/process mismatch.

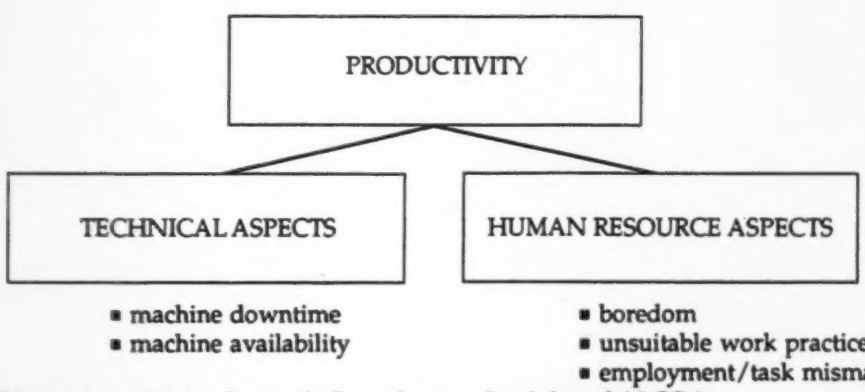


Figure 3.3: Major factors influencing productivity of ALCOA

The process outlined was successful in most departments, with the initial exception of the pot rooms. Employees in the pot rooms are accustomed to the 'traditional negotiative procedures' with management, characterised by direct wage/productivity trade-off. Some employees were unsure of the rationale behind the new agenda and the motives for its introduction.

The next stage of the restructuring process was to conduct a skills audit. The official audit procedure was set up by the company's industrial relations officer in concert with an officer from GOTEC, the commercial arm of the Gordon Technical College in Geelong. The objectives of the audit were to:

- identify the present stock of skills possessed;
- identify the new skills required;
- translate these skills to the new classification; and
- determine the training priorities (based on gap analysis).

The audit which was a combined skills analysis (identifying skills required) and skills audit (identifying skills possessed), was carried out in mid 1991 of the *whole* workforce. It was felt that a pilot would have resulted in trailblazing groups being 'raised on a pedestal', and distancing other groups.

The process worked well for the production employees at the plant, but less well for trade and maintenance workers. In hindsight the company felt that a sequential process should have occurred, with production workers being audited initially, followed by trade-based employees then, lastly, maintenance workers.

Transferring present skills to the new classification with its nine basic levels is proving to be a difficult process. This process is still occurring, with the next logical step being a 'gap analysis' to determine the overall training priorities resulting from restructuring. Implementation teams are being set up in advance to ease in the changes anticipated. The work redesign component of the project is being handled by a Melbourne-based consultant, Wheeler-Strobel.

Example of changes to work organisation

A good case study of changing work organisation at ALCOA is the process worker in the pot room at Point Henry. Work in the pot room is characterised by traditional Taylorist 'time-serving' practices. Four major types of job exist in the pot room:

- Setters: carbon anode changing
- Tappers: removing the molten metal
- Pot attendants: responsible for supervising the pot operation
- Service operators: responsible for overall process supervision

An employee would start his/her career as a setter and move through the structure until retirement as a service operator. Setters were usually young and would work the equivalent of eight hours labour in three hours. Setters were given a quota of setting 32 carbon anodes during a 'normal' work day but, through extreme effort, this was compressed into only three hours. The practice, though potentially dangerous, was popular with employees and has historically been an accepted part of work in the pot room. Through education and involving the workers in the process of change, this practice is no longer prevalent. Work is now spread and the load reduced for individual setters.

As an employee aged, he/she would potentially be offered more senior

positions requiring less physical exertion. The final step prior to retirement in the process was service operator, which would often see a reduction in real wages for the incumbent.

The new structure is very different, and is based around ALCOA's 'team concept'. Each of the three major job types (setter, tapper and pot attendant) would form teams with a 'leader' whose responsibility was to coach, rather than simply supervise and to also act as a resource for members. The basic concept was that operators would be rotated between jobs, and in the process learn new skills and become multi-skilled. Initially however, *tasks* were not associated with *skills*, and a situation eventuated where setters would be required to attend a pot or tap metal, with resultant productivity losses.

This led to a participative process at the shop-floor level and involved 300 employees attending a workshop to evaluate the new work organisation and suggest improvements and/or solutions. The major outcomes were that:

- the teamwork approach should be adopted; but
- each individual team should work out how tasks should be allocated.

Thus, people would continue working within the field they were most experienced with, but training would upgrade their skill level so proficiency in all three would eventually be obtained. The major lesson learnt was the need for early communication and participation, and for the team leader (foreman) to understand the process fully in order to successfully facilitate change within his/her relevant team.

A similar situation is occurring at all levels within ALCOA at Point Henry. The approach that has been taken illustrates a commitment to good communication and co-operation between management and the workforce.

Management view

Management at Point Henry sees many benefits of workplace reform and award restructuring to the organisation. The training manager cited the following major benefits:

- plant responsive to change
- productivity gains, i.e. lower rates of absenteeism, reduction in workforce through 'smarter' work practices
- leaner management structure
- well trained workforce
- lower operating costs

Of equal importance, though, is a general commitment to quality and excellence at all levels. A major aim of the company is:

> *To ensure a culture within the Point Henry and Anglesea workforce consistent with the values of excellence through quality that specifically creates and sustains conditions that encourage continuous improvement, employee commitment and effective and collaborative employee relations, which are fundamental to the plants' current performance and its long-term competitiveness.*

The company feels that if its operators can successfully incorporate more general maintenance into their work schedule on a day-to-day basis, then the whole process has been successful.

Union view

Delegates from the FIA and MEWU discussed the impact of restructuring on the plant's workforce with the researchers. It was generally agreed that the process has thus far been successful, and the workforce has adapted well to the changes. Small pockets of resistance to the process still exist in various areas, but these are a minority. A major highlight of the restructuring has been the consultative nature of discussion, where the individual was given a say.

The perceived advantages of the process to the average employee are:

- career structure with pay linked to skills held and training completed
- greater variety of tasks within work
- removal of demarcation barriers and increased scope for multi-skilling and broadbanding
- job security

The major negative aspect of the process is the frustration felt by many at the slowness of implementing the training modules. It may require up to five years before full access to training is a reality.

Links with TAFE: training implications

Relatively strong training links exist between ALCOA and TAFE through GOTEC, a private company of the Gordon Technical College in Geelong. GOTEC first became involved in April, 1987 when it was approached to provide training for a 'work-value' case for 246 mechanical and electrical tradespeople.

A training needs analysis was conducted by ALCOA's central maintenance supervisor in early 1988 with the result that guidelines were produced that allowed GOTEC staff to develop the appropriate modules. For mechanical tradespeople, 29 *technical modules* related to the work process and nine *general modules* (which aimed to develop problem-solving and inter-personal skills) were designed with some assistance from ALCOA.

The resultant training program commenced in January, 1988. At that time, 178 ALCOA employees were eligible for training, or approximately 22 000 student hours (potentially). This represented a large training demand which TAFE had to respond to quickly and flexibly.

With regards to training for the new process electrician classification, GOTEC was involved in the development and delivery of eight modules with the remaining ten modules being developed and delivered by ALCOA and other external providers such as the Gas and Fuel Corporation.

At the commencement of the training program for the process electricians, there were 68 ETU personnel eligible for training, which equated to approximately 14 700 trainee hours of formal training to be provided by ALCOA and external providers.

Training was conducted during company time at both ALCOA and GOTEC premises (at the Gordon Technical College). To maintain standards and a credible assessment process, training was (and continues to be) provided by TAFE directly or by a suitably qualified and TAFE accredited provider. The training delivered is modular and includes provisions for assessment of each module.

As a follow-up to the initial period of training, GOTEC conducted an evaluation of both trainers and trainees to gauge the effectiveness or

otherwise of the training programs. Approximately 240 maintenance staff and 21 teachers were invited to participate in a questionnaire. The perception by trainees and trainers alike was positive and very few indicated dissatisfaction with any aspect of training.

Training at ALCOA in the future will involve a mix of on-the-job in-company training and classroom teaching complemented with on-site TAFE training where appropriate. At induction, two types of training are viewed as crucial. These are:

- understanding the tasks
- understanding the process

Much of the training effort in the initial stages will centre on these aspects.

Training will be self-paced and competency-based and will address literacy and numeracy requirements. The training manager saw the need to incorporate this into the official training program to form a 'natural outcome' rather than a stand-alone component.

The skills audit identified five major core components of training at all levels:

- technical skills
- operational skills
- occupational health and safety
- quality
- organisational effectiveness

Production workers will be encouraged to participate in official training programs such as the TAFE engineering production certificate. Management at Point Henry feels that training will greatly increase in the next 18 months, and that TAFE will play an important part in the provision of training for the company. Finally, the use of alternative training strategies (computer-based training, off-campus mode) is desirable.

Conclusions

ALCOA as an organisation is committed to using industry restructuring as a vehicle for making their operations more competitive and efficient. Some useful lessons have been learnt by the company and TAFE as a result of restructuring. For enterprises, the need for constant communication with the relevant parties throughout the entire restructuring process is paramount. The consultation process at Point Henry in the months leading up to the implementation of the initial round of training smoothed out many of the concerns people had for the process. Also, training investments should be preceded by a training needs analysis, and a definition of skills requirements. Once training has commenced, continual program feedback and evaluation is useful.

For the TAFE colleges, the need to respond flexibly and rapidly to the training needs of industries/enterprises undergoing restructuring is paramount. Also management and industrial relations issues related to industry training must be effectively handled in TAFE if effective responses to restructuring requirements are to be met.

Chapter 4 Case study: South Australian Engineering & Water Supply Department

Introduction

The Engineering and Water Supply Department (E&WS) has responsibility for providing water-related services in the State of South Australia which include:

- Metropolitan and country public water supplies
- Metropolitan and country sewerage disposal
- Irrigation services
- Water resource management
- Flood mitigation and warning activities

At the time of the study, the organisation employed over 4000 people State-wide. This is a drop of some 17% from 1985–1986 and mostly this is attributed to intra-departmental streamlining of activities and increased efficiency. It represents a very large reduction from the E&WS's peak employment of about 8000 employees in the mid-1970s.

This case study will deal mainly with the Operations Headworks Services (OHS) of the E&WS, with a focus on its current restructuring activities and the training response, especially as this relates to TAFE training. Of specific interest will be the restructuring of the E&WS Department Civil Construction and Maintenance Award.

The Operations Headworks is located at Thebarton in Adelaide and is responsible for the construction and maintenance of large-scale water pipelines, their installation and monitoring. Currently, some 1600 people are employed (at all levels) within the Operations Headworks Services of E&WS.

Competitive strategy

Although being the sole provider of water for South Australia and not subject to direct competition from private providers, the E&WS is striving constantly to improve its efficiency and quality of service. The operations manager sees efficiency as the E&WS's major competitive strength. By the end of the century, the E&WS plans to be totally self-sufficient in its funding arrangements, being the first South Australian State Government department to do so. Providing a high standard of customer service is also of considerable importance to the E&WS.

Award restructuring

The majority of employees at the Operations Headworks Services are covered under four State and national industrial awards:

- E&WS Department Civil Construction and Maintenance Award (at E&WS this award mainly covers crane chasers, scaffolders and pipe joiners)
- State Government General Construction Workers Awards (at E&WS this award mainly covers plant operators, machine operators and some general maintenance staff)
- Government Management Employment Act (at E&WS this award mainly covers administrative and clerical workers)

- National Metal Industries Award (at E&WS this award mainly covers maintenance tradespeople)

The major unions involved in its award restructuring negotiations are the Federated Miscellaneous Workers Union (FMWU), Australian Workers Union (AWU) and the Public Service Association (PSA).

The E&WS has also held discussions with various peak bodies (such as DEET and the Engineering Employers Association of South Australia) and consultants including SATECH (the business arm of SA DETAFE). SATECH has conducted a skills audit and analysis, and plan to aid the E&WS in identifying specific training needs related to industry restructuring and the legal requirements of the occupational health and safety legislation.

The restructuring of the E&WS Department Civil Construction and Maintenance Award is of specific interest to TAFE due to the proposed training links, so this is described here. Restructuring of the award will primarily involve the reduction in skill-related job classifications from 111 to 14. The new proposed streams are set out in figure 4.2. Duty statements have been produced for each classification. The next step will be to conduct individual skill audits for the various occupational groups, determine the skills and responsibilities held, and the training necessary to achieve competence in the new classifications, then determine individual training needs of each employee. The process can be best described in the following diagram (figure 4.1).

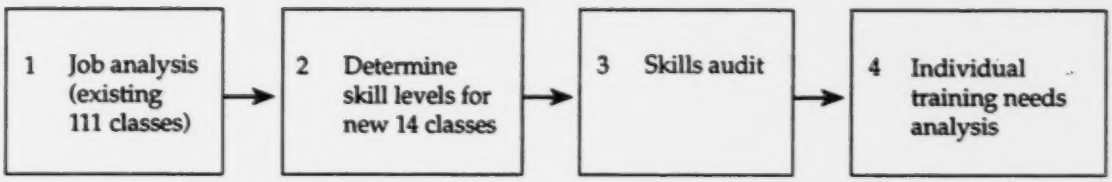
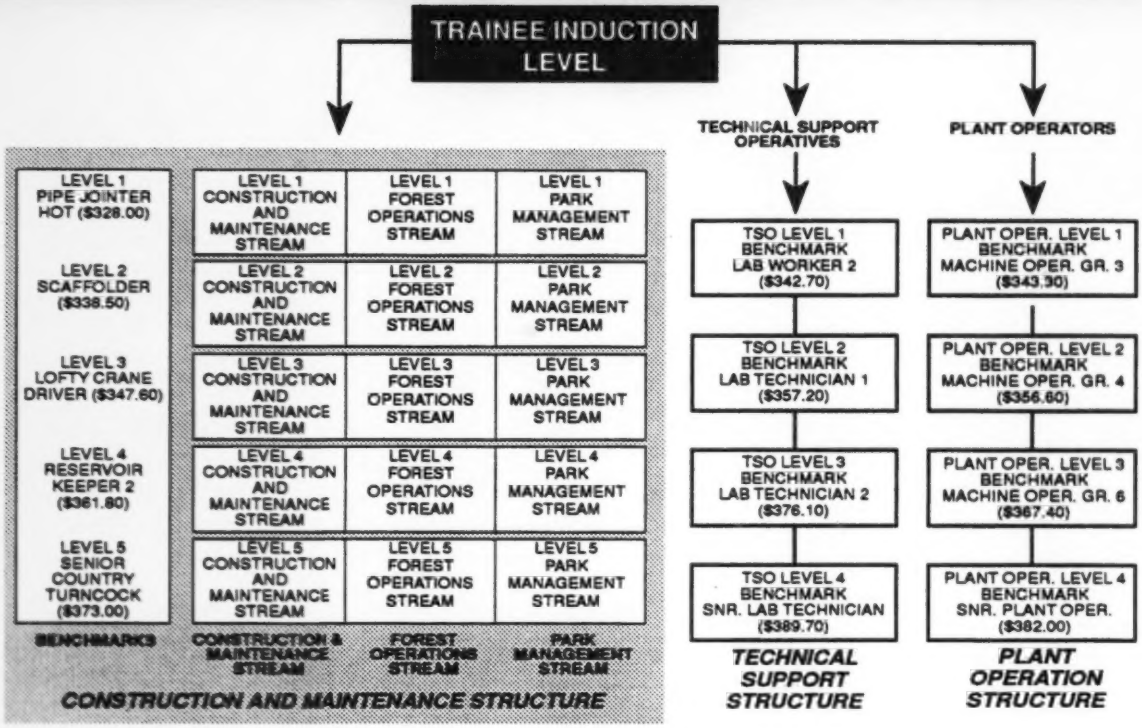

1 Job analysis (existing 111 classes)
2 Determine skill levels for new 14 classes
3 Skills audit
4 Individual training needs analysis

Figure 4.1: Restructuring processes in the E&WS Civil Construction and Maintenance Award

The timescale for restructuring the new award was tight. The initial ground work commenced in March 1990 with the transposition agreement signed in late November 1990. In the first six months of 1991, it was planned that a skills audit and training needs analysis be conducted which would ultimately allow the re-design of all jobs within the award and appropriate training requirements determined. E&WS staff in 1991 produced a skills analysis questionnaire which was piloted on a selected group of maintenance employees at the Bolivar sewage treatment plant. The procedure involved individuals completing the questionnaire on a voluntary basis with assistance from shop stewards where appropriate. The involvement of union representatives in the process ensured a 100% response rate to the survey and fostered wider acceptance of the project and its aims by employees generally. The result of the pilot, however, indicated a need to restructure the questionnaire prior to involving the rest of the workforce in the process. It is envisaged the full round of surveying will commence in mid-1992.

Approximately 1000 employees will be affected by the restructuring of this award, including some general maintenance employees, machine operators, plant operators and technical staff. SATECH, the commercial


TRAINEE INDUCTION LEVEL
TECHNICAL SUPPORT OPERATIVES
PLANT OPERATORS
LEVEL 1 PIPE JOINTER HOT ($328.00)
LEVEL 2 SCAFFOLDER ($338.50)
LEVEL 3 LOFTY CRANE DRIVER ($347.60)
LEVEL 4 RESERVOIR KEEPER 2 ($361.80)
LEVEL 5 SENIOR COUNTRY TURNCOCK ($373.00)
LEVEL 1 CONSTRUCTION AND MAINTENANCE STREAM
LEVEL 1 FOREST OPERATIONS STREAM
LEVEL 1 PARK MANAGEMENT STREAM
LEVEL 2 CONSTRUCTION AND MAINTENANCE STREAM
LEVEL 2 FOREST OPERATIONS STREAM
LEVEL 2 PARK MANAGEMENT STREAM
LEVEL 3 CONSTRUCTION AND MAINTENANCE STREAM
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LEVEL 4 PARK MANAGEMENT STREAM
LEVEL 5 CONSTRUCTION AND MAINTENANCE STREAM
LEVEL 5 FOREST OPERATIONS STREAM
LEVEL 5 PARK MANAGEMENT STREAM
BENCHMARKS
CONSTRUCTION & MAINTENANCE STREAM
FOREST OPERATIONS STREAM
PARK MANAGEMENT STREAM
CONSTRUCTION AND MAINTENANCE STRUCTURE
TSO LEVEL 1 BENCHMARK LAB WORKER 2 ($342.70)
TSO LEVEL 2 BENCHMARK LAB TECHNICIAN 1 ($357.20)
TSO LEVEL 3 BENCHMARK LAB TECHNICIAN 2 ($376.10)
TSO LEVEL 4 BENCHMARK SNR. LAB TECHNICIAN ($389.70)
TECHNICAL SUPPORT STRUCTURE
PLANT OPER. LEVEL 1 BENCHMARK MACHINE OPER. GR. 3 ($343.30)
PLANT OPER. LEVEL 2 BENCHMARK MACHINE OPER. GR. 4 ($356.60)
PLANT OPER. LEVEL 3 BENCHMARK MACHINE OPER. GR. 6 ($367.40)
PLANT OPER. LEVEL 4 BENCHMARK SNR. PLANT OPER. ($382.00)
PLANT OPERATION STRUCTURE

Figure 4.2 E&WS Department Civil Construction and Maintenance Award (classification structure and benchmark positions)

arm of the Department of Employment and TAFE will administer the questionnaire and complete the analysis.

Award restructuring in the metal and engineering industry will affect approximately 600 employees at E&WS and will similarly involve the reduction in job classifications to 14 skill levels. The process being adopted for the restructure was described previously in the Perry Engineering case-study.

The Government Management Employment Act is similarly being restructured, and will affect approximately 1400 employees within the E&WS Department.

To date, job redesign has not been a significant component of the restructuring as this has already occurred previously. Award restructuring in essence is now building into the award, the flexibility that has always existed, and which has steadily been increasing over the last five years due to the need to stream-line its services.

Management view

The operations manager believed that there would be few realised productivity effects resulting from restructuring. Radical changes to the way people work, especially cross-skilling and some broad-banding, have occurred already over the previous five years out of hard economic reality, and *not* due to award restructuring.

The operations manager expressed the opinion that so far the E&WS had not reaped the anticipated productivity gains from restructuring envisaged. The pace of restructuring has unavoidably slowed due in part to a lack of full agreement by the various parties on how the process should proceed.

Some benefits have materialised, however, including an improved consultative framework between management, unions and employees and a feeling that the workforce generally are more amenable to the changes proposed. It was felt, however, that these changes may have been achievable outside the broad umbrella of award restructuring.

Union view

The unions are optimistic about the possibilities that restructuring poses for the E&WS, but suggest there is considerable frustration at the lack of progress being made to date. Employees have been made aware of the process at each stage through their shop steward or union representative, and many have embraced the notion of skills training and career path development. The slowness with which training is being implemented is causing some concern to employees.

Training implications

As with Perry, strong training links with TAFE have been established, with trade level employees attending block release courses at TAFE and considerable consultation between the organisations occurring.

Training within the E&WS Department has historically been fragmented. The major components of training are:

- Industry training unit — 'Hands-on' apprentice (Metal Trades Centre) Otaway — training in welding, hydraulics etc.
- Operations training unit — Hope Valley — Technical training in information technology
- Customer relations training
- Manager training and development

As an organisation, E&WS is exceeding the training guarantee requirement, annually spending 2.5%-3% of its payroll on training. The manager, Operations Training suggested this figure will be likely to increase considerably once the E&WS is in a position to evaluate the training requirements of award restructuring.

Presently, the E&WS in conjunction with TAFE, is developing a specific utility and construction maintenance traineeship with funding from DEET. Intended to be broad-based, the course will be such that it will be applicable to various utilities, including gas, electricity, road transport and water provision.

The course will have a common core element built into it, however, specialised streams will be available for specific needs: in the case of E&WS, trenching, sewer operations and so forth. Seen as an initial pre-requisite course for entry into the E&WS organisation, the course is an attempt to introduce portability into their training, and like other traineeships, the off-the-job component of the one-year traineeship would be the equivalent of three months full-time study, and would be articulated with trade-training.

Multi-skilling is occurring to a small degree within the organisation; however, cross-skilling has been occurring for many years, especially at rural depots which usually have small work teams responsible for a variety of tasks. Trade demarcation has not presented a real problem, with operators able to engage in up to eight different functions and

transfer between jobs. An operator may be required to work in a maintenance, construction or sewer maintenance capacity at short notice, which exemplifies the flexibility built into the E&WS Department's operations; however, a fear was expressed that employees were losing highly specialised skills in the process.

Links with TAFE

The E&WS representatives interviewed held a very positive view of TAFE, especially its relationship with specific colleges. Tailored training in the areas of general maintenance and crane-chasing has been provided by TAFE for some time and is expected to continue in the future. SATECH, as mentioned previously, has been involved in consultative work for the E&WS including skills analyses projects and training needs analyses are planned.

The operations manager believes the cost of training will increase as a result of restructuring, but stressed that the level of training will be strongly determined by available funding. The E&WS Department will continue to use TAFE training, providing the product is of appropriate quality and applicability. Increasingly, E&WS will also make use of training packages made available through 'sister organisations'. An example of this was a specific training module developed by the Melbourne Metropolitan Board of Works (MMBW) in Victoria which was successfully modified for use in South Australia with the assistance of MMBW technical staff.

Clearly TAFE now has competition in this area. In most areas, however, TAFE is still the preferred provider but other training providers could well be considered in the future in each area of training need.

The E&WS Department really began restructuring its activities well before the process of industry restructuring ever became an issue. Streamlining its activities has seen the number of employees reduced from 8000 in the mid 1970s to approximately 4000 at present. In recent years, running costs have been reduced in the order of 10% while its responsibilities have multiplied considerably. Industry and award restructuring will act as a catalyst for more structured training in the future and will promote career path development and greater worker flexibility, but this is only one factor in many that will influence the department's future operational strategies.

Chapter 5 Case study: Perry Engineering Pty Ltd

Introduction

Perry Engineering is a subsidiary company of Boral Limited, located at Mile End, South Australia. Perry's main area of business is heavy engineering, engaging in structural and mobile mechanical equipment construction, machining and forging, surface treatment, field erection and mechanical installation. A wide range of industries are served by Perry, including the mining industry, automotive production, paper manufacturing and the Department of Defence.

Presently, the company employs approximately 320 people and has an annual turnover between $25-$30 million. In recent years, the company has enjoyed sustained growth and is presently in a phase of expansion with various large civil and defence contracts coming on-line.

Competitive strategy

The company has a strong quality ethic which extends to all levels of Perry's activities, and is a key factor in its competitive strategy. Stringent quality standards and frequent audits ensure a high level of quality assurance.

Other factors which make Perry competitive include flexibility, their ability to quickly respond to the needs of potential clients, whether their requirements are for small-scale composite work or large-scale fabrication or installation. A major strength lies in its work-force, with a wide range of competent, highly trained trade and technician-level employees on site.

Award restructuring

In contrast with ALCOA and Printco, Perry Engineering's workplace reform process is centred on industry-wide industrial awards rather than an enterprise award. The employees at Perry are broadly covered under three national industrial awards:

- National Metal Industries Award (at Perry this award covers most boiler makers, toolmakers and fitters and turners)
- Transport Workers Award (at Perry this award covers crane drivers, crane chasers and forklift operators)
- Clerical Officers Award (at Perry this award covers most clerical officers and secretarial staff)

Seven trade unions are represented at Perry and are presently involved in award restructuring negotiations. The unions include:

- Metal and Engineering Workers Union (MEWU)
- Australian Society of Engineers (ASE)
- Electrical Trades Union (ETU)
- Federated Engine Drivers and Firemens Association (FEDFA)
- Transport Workers Union (TWU)
- Federated Clerks Union (FCU)

The company has also been involved in discussions with various peak bodies including the Engineering Employers Association of South Australia (EEASA).

The restructuring of the metal and engineering industry award involves replacing the old structure with a new framework that sees the drastic reduction in the number of classifications to eight occupational groups and 14 skills levels. The initial restructuring of the award has been completed, with re-classification presently occurring; however, the company expects these negotiations to stretch out to at least mid-1992 to accommodate the new guidelines for metal trade job classifications C10-C5 (engineering tradespersons level 1 to advanced engineering tradesperson level 2 and graduate scientist level 1/engineer level 1).

The restructuring of the metal and engineering industrial award will affect the majority of employees at Perry, however, the negotiations associated with the Transport and Clerical Officers awards will affect various other employees not covered by the metals award.

Award restructuring in the transport industry involves the reduction in the total number of skill levels from 45 to 10, and will primarily affect mobile crane chasers, crane operators and fork-lift drivers at Perry. Negotiations are well advanced, with the new classification already translated. The training mechanisms and core training standards have yet to be determined, however.

The clerical officers award is similarly in the process of being restructured. Currently, no specific classification structure is in place; however, it is expected that as a result of a study jointly funded by the Australian Employers Federation, Federated Clerks Union of Australia and the Federal Government in 1991, skill-related job structures with accompanying training modules will be implemented shortly. The estimated date for implementation is uncertain, but expected to be in mid-1992, and will affect clerical staff at Perry employed in general office administrative positions.

Management view

Perry Engineering is not certain what the outcomes of restructuring will be to work organisation and training; it is as yet unclear exactly how award and industry restructuring will proceed. It is generally agreed that the role of training will increase in importance irrespective of restructuring negotiations. Management at Perry believe they have yet to see any productivity gains from the present round of restructuring negotiations. Restructuring has, however, indirectly influenced the relaxation of demarcation lines which have historically plagued the company. Employees can now move between departments and trade areas to a limited extent, usually to carry out basic maintenance. In the past, 'employee flexibility' has not been an integral part of Perry's competitive strategy. The works manager states there was no need for a fitter to become a machinist and vice versa. This situation, he believes, will change rapidly as the full impact of industry restructuring becomes apparent and the need to be more flexible becomes greater.

Union view

The unions are not satisfied with the present pace of restructuring at Perry's but recognise this is partly due to the wider issues faced by restructuring of the national metals industry. Many employees at Perry are reticent about the proposed changes resulting from restructuring. Some feel threatened by the need to up-skill because they believe currently-held credentials and experience are sufficient for competent performance in their present jobs. Others are enthusiastic about the potential for career development and training. The challenge for management and union bodies is to cater for the needs of all employees

within the firm, but achieving this in conjunction with Perry's competitive strategy.

Training implications

Strong training links have been established between Perry and TAFE, with several of the Perry staff lecturing at TAFE colleges and participating in fabrication and mechanical engineering management groups. The company has established a welding skills centre, which is presently seeking official TAFE accreditation and also provides AQAP training and consultancy services. At present, however, TAFE has not been involved to any significant degree in providing tailored training or consulting to the company relating to restructuring. In essence, the reverse situation has occurred, with Perry technical and trade staff providing input to the development of specific training modules for TAFE.

Training is an integral part of Perry's activities, and with the increasing sophistication of the market, complexity of product range and consumer demand and need for shorter lead-times, expenditure on training is expected to increase considerably over the next three years. The main components of training are broadly:

- Basic trade level — block release TAFE trade training in conjunction with in-house, hands-on experience
- Technician level — in-house training relevant to the responsibilities held
- Management level — some in-house training and outside management training through consulting bodies such as the Centre for Manufacturing

The company is presently exceeding the training guarantee requirement and expects its training costs to double, depending on the outcomes of award restructuring, but more importantly, the anticipated increases in TAFE fee-for-service training in the mechanical and fabrication engineering areas.

Perry's works manager expects the impact of training associated with award restructuring to affect employees differently. The concept of 'up-skilling' has been met with a degree of hostility by many tradespersons, especially those aged over 45 years who frequently lack the educational background to tackle advanced-level training. These people are, however, highly trained and competent in the work they do. The bulk of future training will centre on the younger generation who are conversant with the 'class-room' situation. The training manager estimates that 60% of employees aged under 30 will want to undertake post-trade training, compared to only 5% of employees aged 46 or more in the near future.

Presently, minimal across-trade cross-skilling is evident at Perry; however, multi-skilling is accepted and has been occurring for some time. A 'sub-culture' of broad-based skills, especially for maintenance workers has emerged. The historical mechanical/electrical trade demarcation barriers have been partially removed, although some employees still see some 'inherent philosophical' problems with the merging of the two trade areas to *any* extent.

Links with TAFE

The company holds the view that TAFE training is occasionally inadequate and frequently inappropriate to their training needs. TAFE programs are not always addressing the fundamental requirements of the metal industries due to deficiencies in course design, antiquated

machinery, and, occasionally, lack of suitably trained staff. Increasingly, teaching staff are being sought from industry who have 'grass-roots' knowledge of current needs in the metal industry and superior hands-on technical experience. Perry sees benefits, however, for both TAFE and industry from this liaison (e.g. TAFE has the teaching expertise, industry the technical know-how).

The training manager at Perry believes that greater liaison between TAFE curriculum writers and industry needs to occur to ensure that appropriate modules be designed that allow for multiple-entry and exit. Presently, this type of modular approach is being promoted by TAFE, but frequently restricts the possibilities for basic trade qualified employees to advance up the career ladder. In the future, the opportunities for qualified tradespeople to progress to professional level responsibilities will be significantly reduced due to the often stringent education pre-requisites proposed or in place.

The need for nationally consistent modules was viewed as crucial to the success of award restructuring. At present, training can differ markedly between States, colleges and even lecturers. Frustration has been experienced by Perry with TAFE courses that have lacked specific focus due to a lack of communication on what should be included in each module and what standards adopted.

Finally, the management at Perry believe that, increasingly, training will need to be delivered at the 'shop-floor' rather that at college, especially as industry has the latest equipment and facilities available for advanced-level training.

Perry Engineering sees award restructuring as a means of making its enterprise more efficient and competitive. This can only be achieved if it has the full support of industry, government, unions and workers. The transition from the old ways to the new is regarded as painful for many employees, but the changes should ensure greater job security in the long-term. Management at Perry are eager to strengthen their training links with TAFE, especially the provision of specific mechanical and fabrication modules on-site when they become available.

Chapter 6 Some lessons from the case studies

Case studies compared with models from literature

The four case studies are from different industries so it is difficult to compare their work reform strategies other than on the broad factors of reform common to all industries. As there is only one case study in each of four industries, it also would be dangerous to try to generalise about the current state of workplace reform in these industries. What we can draw from these case studies are key issues to be addressed and some insights on the nature of workplace reform in Australian industry and possible roles for TAFE in this process.

Both ALCOA and Printco are in continuous-process industries where efficiency and quality are likely to be major factors in enterprise competitiveness. There is less scope for flexibility and innovation, and this is reflected in the current culture and strategies of both ALCOA and Printco. Printco appears close in structure, culture and current strategy to the model 'efficient firm' described in chapter 2. It approach to industrial relations and award restructuring appears close to the minimisation approach described by Curtain and Mathews. Printco's commitment to training appears to be moderate. It has offered apprenticeships to ensure its supply of skilled tradespeople, mainly for maintenance functions at the plant, and has supported training associated with industrial agreements.

In contrast, ALCOA's approach has the features of the productivity enhancement approach, and its strategy involves achievement of many of the characteristics of the 'flexible firm'. ALCOA has a strong commitment to training, and has developed a good working relationship with the local TAFE college over many years. Since 1987 a very large number of training modules have been developed and offered to the workforce. There are, however, differences between the ALCOA case study and the ideal flexible firm described by Bolwijn and Kumpe. Much of the rhetoric of reform at ALCOA emphasises the gains in efficiency and quality. Also, the market that ALCOA is in has price and quality, rather than flexibility and innovation, as their criteria for success. The culture of the workplace at ALCOA is one of efficiency, quality, co-operation and communication. Thus, ALCOA has most of the features of the 'quality firm' but its current strategy of structural change (for example, the formation of semi-autonomous work teams with each member being multiskilled) is aimed at the 'flexible firm'.

The Engineering and Water Supply Department of South Australia (E&WS) has many of the features of the 'efficient firm', and its current strategy aims at further improvements in efficiency, mainly through cost reduction. Another key part of its strategy is aimed at improvement in quality, with a focus on improvement in customer service. Training is viewed as an important way of improving productivity and quality, and the level of expenditure on training at E&WS is relatively high. The current award restructuring, however, at E&WS is not seen as an opportunity for substantial workplace reform by management. Instead it is seen largely as a means of consolidating organisational and job design changes that have evolved steadily over recent years. Award restructuring at E&WS has been a slow and complicated process with

four State and national industrial awards covering the Operations Headworks Services at E&WS being negotiated. The approach used appears to have elements of both the cost minimisation and productivity enhancement approaches.

Perry Engineering may be viewed as somewhat between E&WS and ALCOA in terms of approach to workplace reform. Quality and, to a lesser extent, flexibility are the two main aims of its competitive strategy. Perry currently has many of the features of the 'quality firm'. Perry's market demands flexibility, but there were no firm plans to improve flexibility further through changes to work organisation at the time of the study. There has been a gradual implementation of multiskilling at Perry because of the market pressure requiring flexibility. As at E&WS, there is a high level of expenditure on training at Perry. Also as for E&WS, Perry's approach to award restructuring appears to have elements of both the cost minimisation and productivity-enhancement approaches.

These four case studies were selected partly because the enterprises were seen as advanced in their workplace reform, yet none of the four could be characterised purely as the 'flexible firm'. Many aspects of the flexible firm are presented as the agenda for workplace reform in Australia. We cannot generalise from so few cases, but this may suggest that very few firms in Australia have successfully undertaken workplace reform and progressed as far as the 'flexible firm' or 'innovative firm'. Another worrying aspect of these case studies is the common expression of frustration by management and unions at the slowness and extent of progress in award restructuring and workplace reform. In many enterprises this frustration could develop into lack of support for workplace reform.

Other than case studies, very little empirical research on workplace reform has been conducted in Australia and overseas. We cannot be sure of the extent and nature of workplace reform in Australia over all industries or over each industry sector. One way of approaching such research is to develop key indicators of organisational structure, culture, skill levels and training, and then to collect data on the progress of workplace reform through these indicators.

Lessons from the case studies for TAFE

There are many lessons for TAFE in these case studies. In all of the case studies the enterprises had a long term association with TAFE, mainly through trade apprenticeship programs. This relationship is giving TAFE an opportunity to provide much of the anticipated large increase in post-initial vocational education and training—much of this will involve fee-for-service programs; however, the enterprises made it clear that other, private, training providers and in-house training arrangements are being considered. TAFE needs to compete for this market on the grounds of price, quality and flexibility. In some cases, such as the Gordon Technical College and ALCOA, TAFE has captured a large proportion of the fee-for-service training programs for enterprises.

Some of the people interviewed in the case studies expressed some concerns about the quality and/or flexibility of TAFE's initial vocational education programs such as the trade certificate, while others expressed satisfaction with the current programs. One suggestion was that some of the trade modules should be delivered on the shop floor rather than the college because industry has the latest equipment and facilities. Another suggestion was that TAFE be more flexible in the time and place for delivery of vocational education. This was a particularly important issue

for Printco because of its non-capital city location and limited periods for major maintenance of process machinery.

A number of training-related services have been needed by the enterprises in our case studies. Such services include needs analysis, skills analysis and skills audit, training program design, program evaluation and accreditation. In the cases of ALCOA and Perry some of these services had been provided by private consultants and by in-house staff. There is a large and expanding market in these services and TAFE colleges all over Australia have entered this market with mixed success. The perceptions of the capacity of TAFE staff to undertake such tasks varied greatly among the case studies.

In the current environment of most enterprises undergoing some process of workplace reform, there is a large expansion of demand for vocational education and training and training related services. This presents a variety of opportunities for TAFE—opportunities which need to be recognised and pursued. To make the most of these opportunities, TAFE colleges themselves need to become 'flexible firms', so that they can play a significant role in helping enterprises to become flexible firms through workplace reform.

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